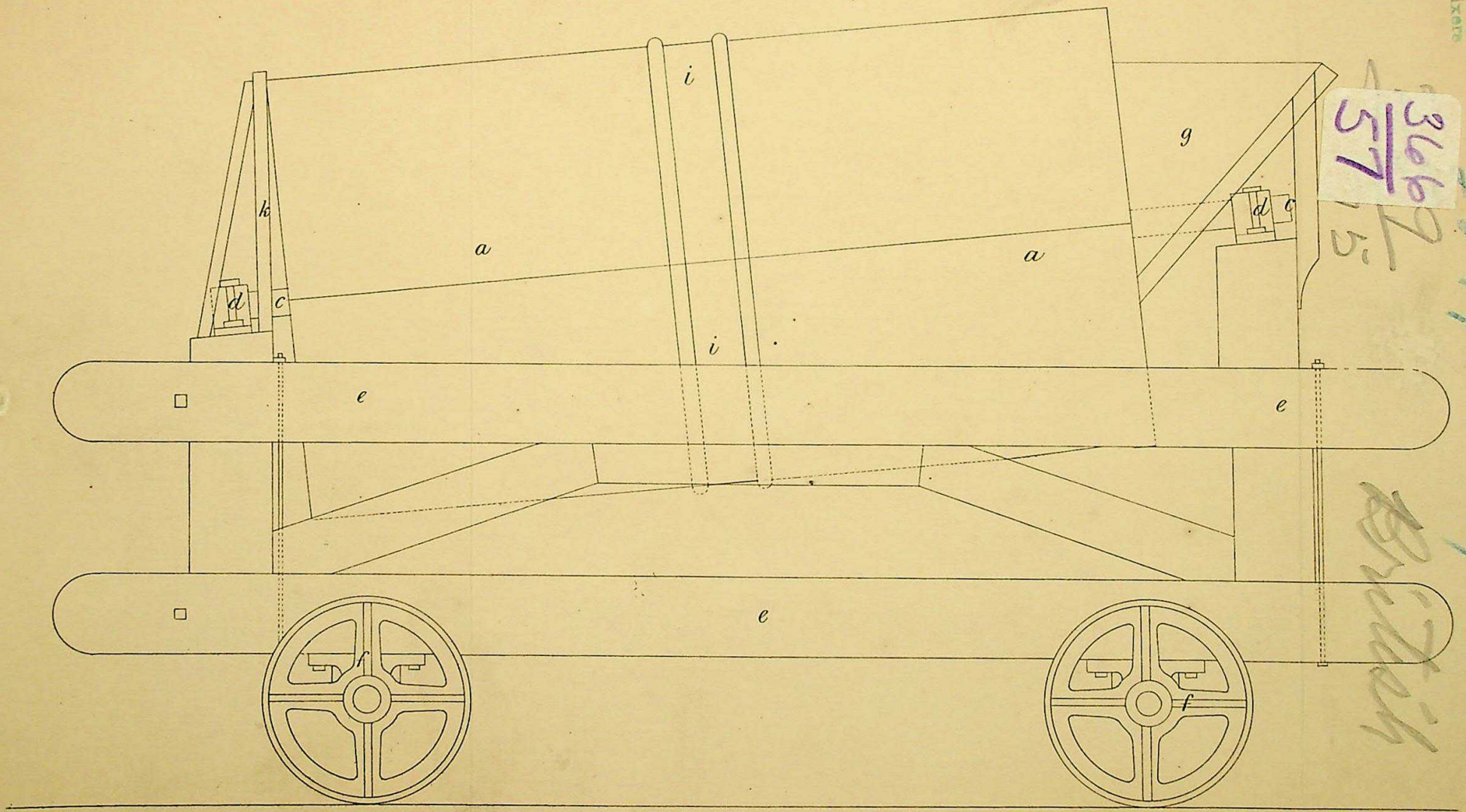
FIG. 1.



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War With Spain.

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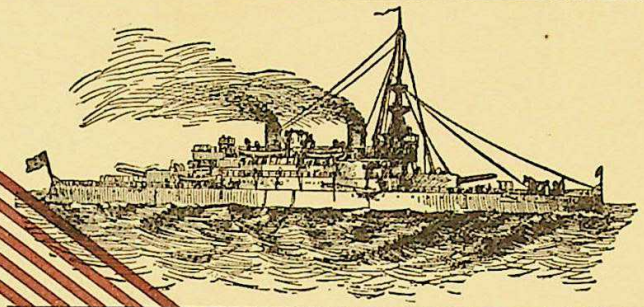

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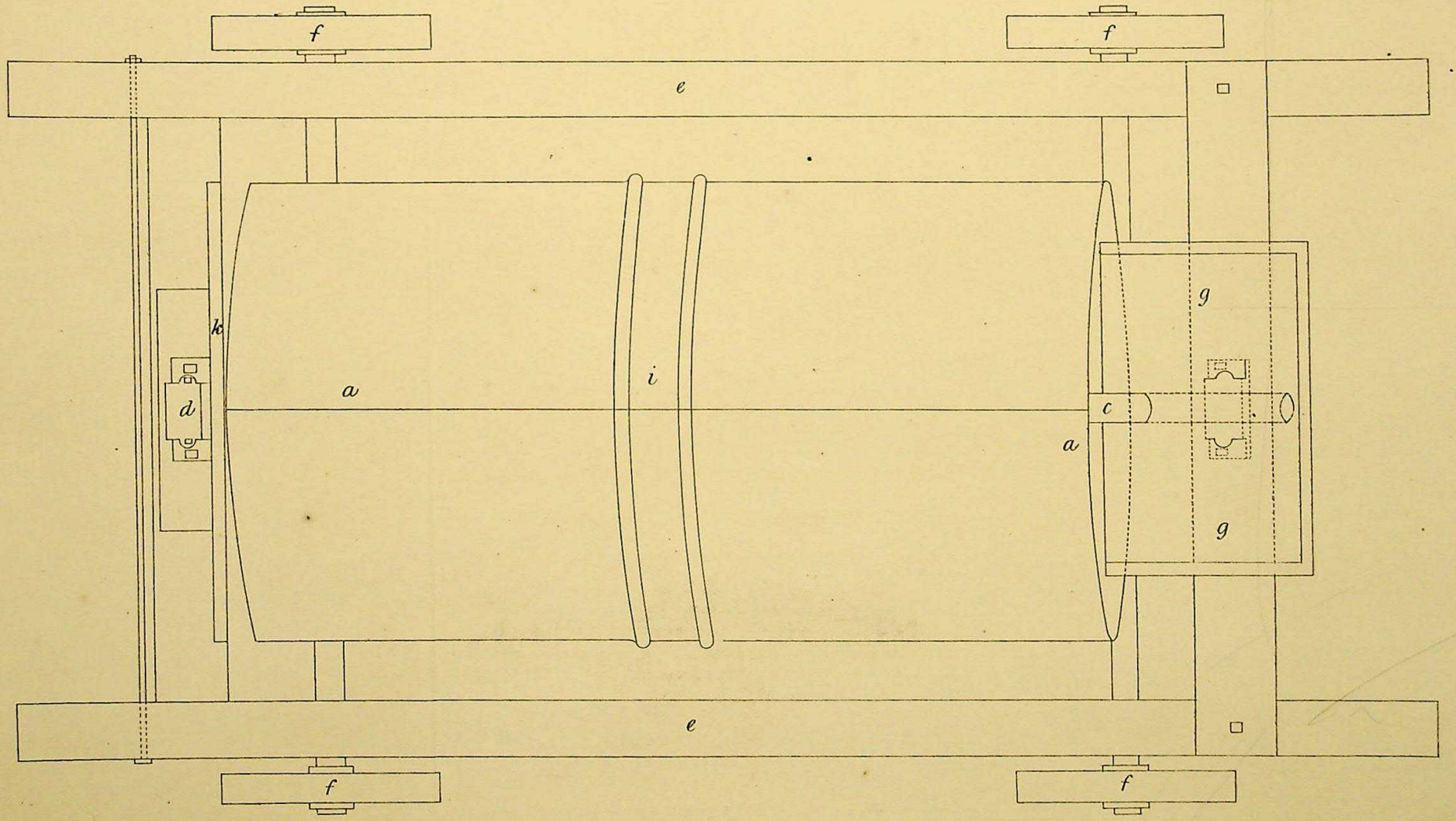
FIG. 2.



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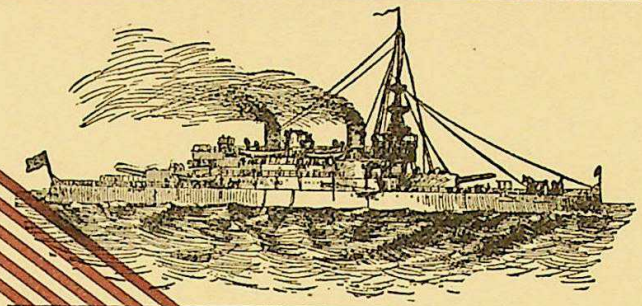

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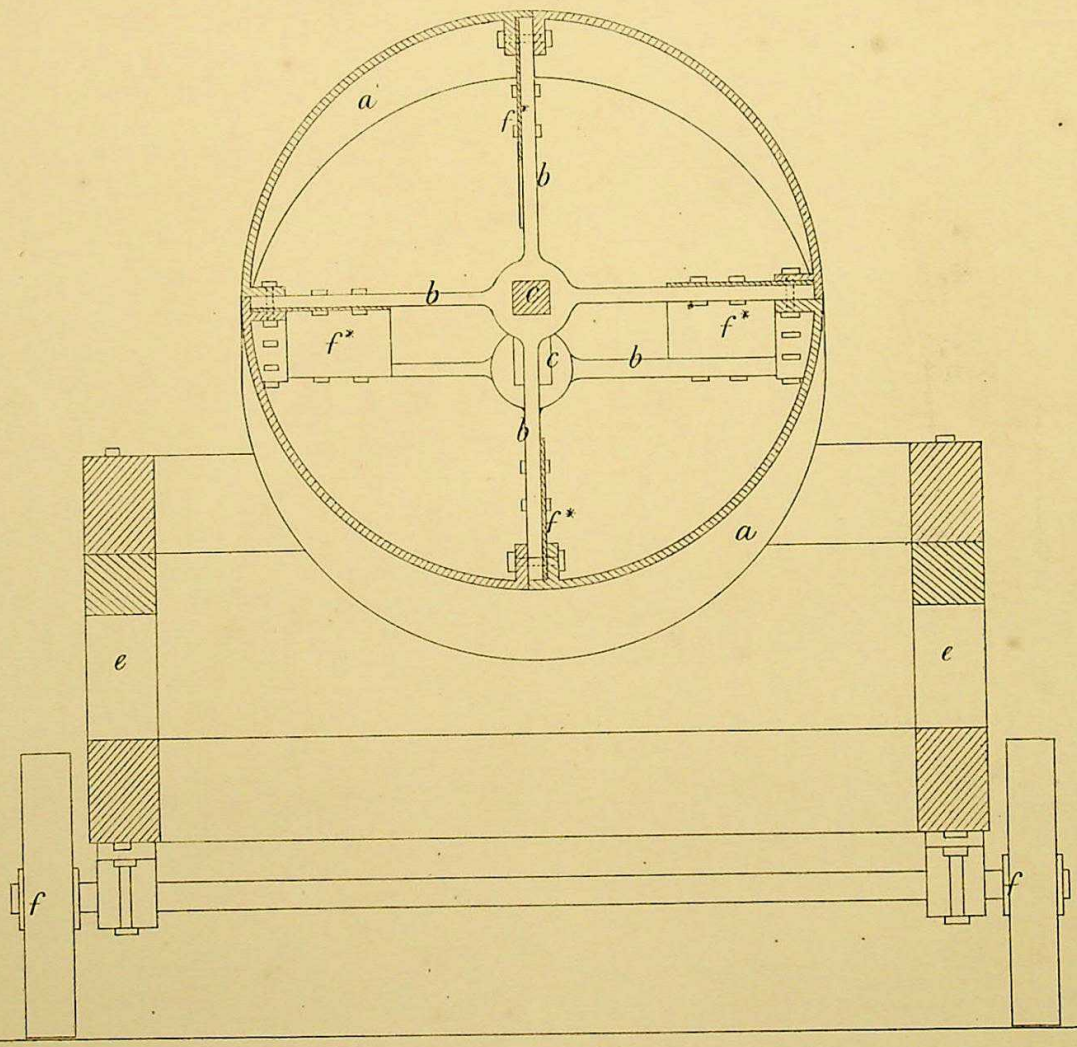
FIG. 3.



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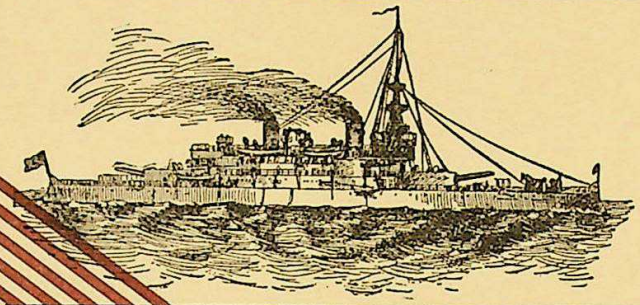

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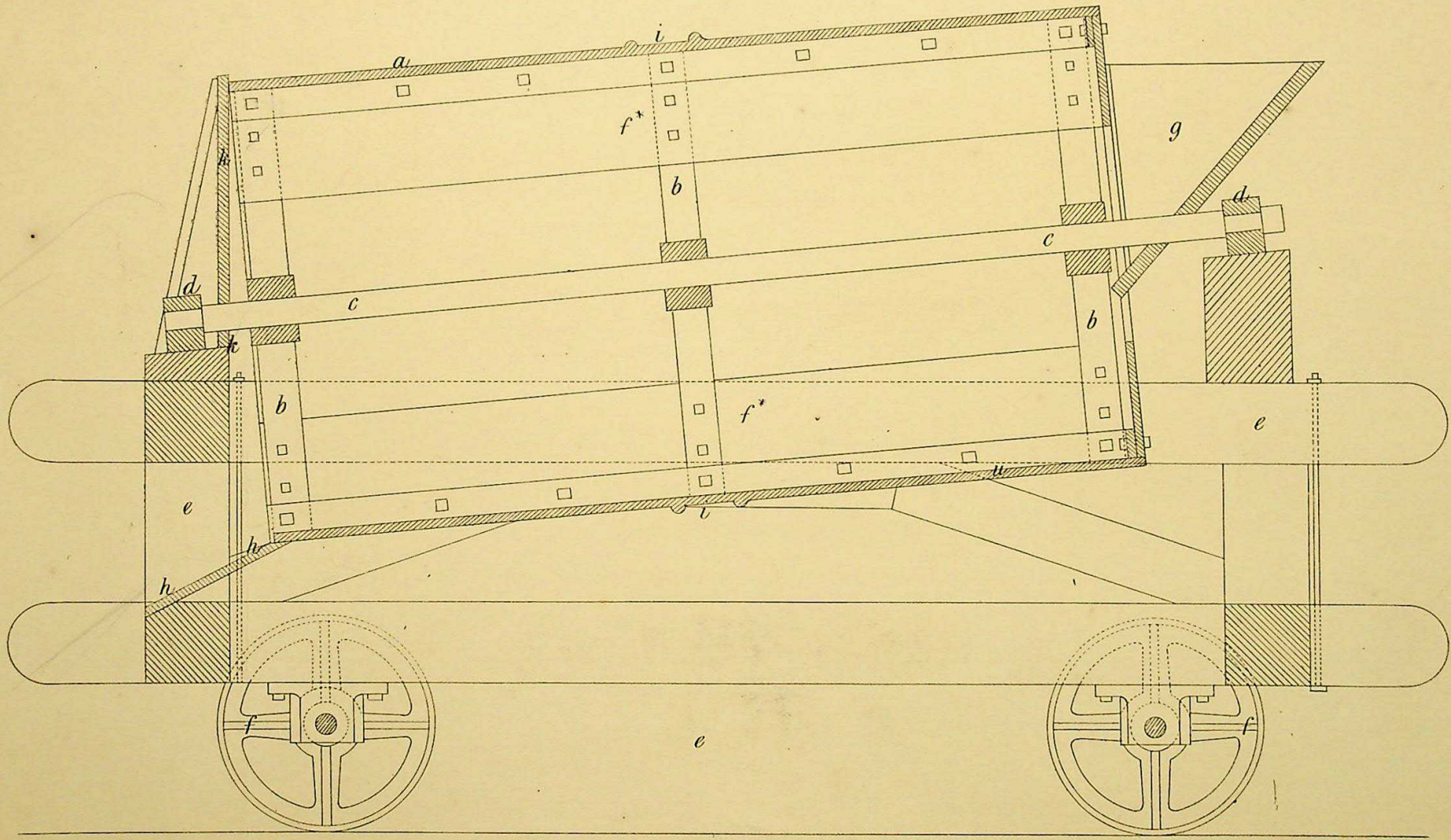
FIG. 4.



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"IMPROVEMENTS IN MACHINERY OR APPARATUS FOR MIXING THE MATERIALS FOR MAKING CONCRETE, WHICH IMPROVEMENTS ARE ALSO APPLICABLE TO MIXING OTHER SUBSTANCES," upon the condition (amongst others) that I, the said Thomas Dawson Ridley, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Thomas Dawson Ridley, my do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement in writing, and on reference being had to the accompanying Sheet of Drawings, that is to say:—

In carrying out this Invention I employ a vessel or case in the form of a cylinder or truncated cone, (or of any other similar suitable shape,) mounted upon a central shaft, to which a continuous revolution is imparted from a steam engine or other motive power in any convenient manner. In the interior of this vessel are fitted longitudinally (that is, parallel to the shaft) shelves, which are attached to the inside of the cylinder or case, extending towards but not reaching to the central shaft. The cylinder or case is made with both ends wholly or partially open, and if a vessel of a cylindrical, hexagonal, or other parallel sided figure be used the central shaft or axle must be mounted at an inclination to the horizon, so that the materials to be mixed being thrown into the elevated end, as the vessel revolves will be continually lifted up by the shelves from which they will also be as continually falling, and will thus become well mixed or incorporated together. At the same time it will be obvious that as the materials are lifted at right angles to the axis of the cylinder and fall off the shelves perpendicularly (or at right angles to the horizon), they will gradually reach the lower end of the cylinder, whence they will be discharged, and thus a continuous feed of the materials and a constant delivery of concrete will be maintained.

If a vessel of a taper or conical form be used the central axis or shaft may be mounted parallel to the horizon, and the materials be fed into the smaller end. In this case the inclination of the sides of the vessel will have the same effect as the inclination of the shaft in the former case, and the materials will gradually descend towards the larger end, where the mixed concrete is discharged; but in any case the mixing action of the shelves and the continuous feed and discharge remain the same.

Such being the nature and object of my said Invention for "Improvements in Machinery or Apparatus for Mixing the Materials for Making Concrete, which Improvements are also applicable to Mixing other Substances," I will now proceed to describe more in detail the manner in which the same is to be or may be performed or carried into practical effect, and in order that the same may be distinctly understood I have annexed hereunto a Sheet of Drawings illustrative thereof, and have marked the same with figures and letters of reference corresponding with those in the following explanation thereof, that is to say:—

In the annexed Drawings (which by way of example represent the apparatus as made with a vessel or case of a cylindrical form, and consequently with the central shaft slightly inclined to the horizon, Figure 1 is a side elevation of my improved apparatus; Figure 2 is a plan view of the same; Figure 3 is a vertical transverse section, and Figure 4 a longitudinal section thereof.

a, *a*, is a vessel or case of a cylindrical form mounted by means of arms *b*, *b*, on a central shaft *c*, *c*, which is slightly inclined to the horizon, and is supported in bearings *d*, *d*, which are carried by a wooden frame *e*, *e*, mounted upon wheels *f*, *f*. Inside the vessel or case *a*, *a*, are four longitudinal shelves *f**, *f**, bolted to the arms *b*, *b*, and also the inner flanges of the vessel *a*, *a*, and which extend in a radial direction from the interior of the same about midway to the central axle. These shelves may either be formed flat, as shown in the Drawing, or they may be curved if preferred. *g*, *g*, is a hopper, by means of which the concrete or materials to be mixed is or are fed continuously into the vessel or case *a*, *a*, and *h*, *h*, is a spout by means of which they are delivered or discharged in a thoroughly mixed state at the lower end of the machine. The elevated end of the case *a*, *a*, is closed from the rim inwards as far as the shelves *f**, *f**, extend, and the lower end thereof is open, but a screen *k*, *k*, is placed before it from the top about three-fourths of its depth downwards to prevent the materials from flying out, and to cause them to drop into the spout *h*, *h*. A continuous revolution is imparted to the cylindrical vessel or case *a*, *a*, by means of an endless belt passing around the groove *i*, *i*, at or near the centre thereof, and also round a pulley or drum which receives motion direct from the steam engine or other motive power, or it may be driven in any other convenient manner.

Having now described the nature and object of my said Invention for "Improvements in Machinery or Apparatus for Mixing the Materials for Making Concrete, which Improvements are also applicable to Mixing other Substances," together with the manner in which the same is to be or may be

performed or carried into practical effect, I would remark, in conclusion, that I claim as my Invention a revolving vessel or case with internal shelves constructed, arranged, and operated substantially as herein-before described and represented in the Drawings annexed.

In witness whereof, I, the said Thomas Dawson Ridley, have hereunto set my hand and seal, this Eighth day of March, in the year of our Lord One thousand eight hundred and sixty-five.

THOS. D. RIDLEY. (L.S.)

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1865.